



Initial Review  
BOX AF

S/N 08/390,774

RESPONSE UNDER 37 CFR 1.116  
EXPEDITED PROCEDURE  
EXAMINING GROUP 2302

RECEIVED

JUN 19 1996

GROUP 2300

#12

PATENT

J-Epps  
6/19/96

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: Michael W. Morgan                      Examiner: D. Pan  
Serial # : 08/390,774                      Group Art Unit: 2302  
Filed : February 17, 1995                      Docket: 30293.1US02  
Title : METHOD AND APPARATUS FOR RECOGNIZING AND  
PERFORMING HANDWRITTEN CALCULATIONS

REQUEST FOR RECONSIDERATION

Box AF  
Assistant Commissioner  
for Patents  
Washington, D.C. 20231

Dear Sir:

I. Introduction.

In response to the Office Action of March 14, 1996 and the telephone interview between the Examiner and the Applicant's attorney on March 25, 1996, re-examination and re-consideration of the application is requested.

II. Interview Summary Record.

Record is made of telephonic interviews between the Examiner and the below-signed attorney that occurred on February 7, 1996, February 14, 1996 and March 25, 1996. During the interviews, the status of the application, and the relevance of the prior art references to the claimed invention were discussed.

The Applicant's attorney notes that the Office Action of March 14, 1996 did not acknowledge the Applicant's second Amendment Under 37 C.F.R. § 1.111 and Declaration Under 37 C.F.R. § 1.131 submitted March 1, 1996. Thereafter, the Applicant's attorney called the Examiner on March 25, 1996 to discuss the status of the present application. During that interview, the Examiner indicated that the Applicant's second Amendment Under 37 C.F.R. § 1.111 and Declaration Under 37 C.F.R. § 1.131 submitted March 1, 1996 appeared to overcome the rejections in the application, but asked that the Applicant's attorney submit another response after final with arguments directed to the newly-cited prior art references.

### III. Request for Withdrawal of Premature Final Rejection

The Applicant respectfully requests withdrawal of the final rejection on the grounds that it is premature. The rejections in the Office Action are based on prior art not previously of record and are directed to claims that were amended to include limitations that should reasonably have been expected to be claimed. More specifically, the independent claims were amended to clarify terminology already present in the claims and to incorporate limitations present in dependent claims as originally filed in the application. Therefore, the Office Action introduces new grounds for rejection not necessitated by Amendment by the Applicant. Consequently the final rejection is premature and should be withdrawn.

#### IV. Non-Art Rejections.

In paragraphs (2)-(5) of the Office Action, claims 26-44 were rejected under 35 U.S.C. § 112, second paragraph, as being indefinite.

The Applicant respectfully traverses these rejections, in light of the amendments made in the second Amendment Under 37 C.F.R. § 1.111 and the arguments set forth below.

With regard to the rejections relating to the use of the phrase "trace", the Applicant asserts that there is no need nor legal requirement for the phrase to be further defined in the claims. As previously argued in the second Amendment Under 37 C.F.R. § 1.111, the phrase "trace" is used as a verb in the claims and is grammatically correct. According to Webster's II Dictionary, (2d ed. 1988), at p. 1223 thereof, the word "trace" means "to make a design or series of markings on a surface." Thus, the rejection under 35 U.S.C. § 1.112 should be withdrawn.

#### V. Prior Art Rejections.

##### A. The Office Action Rejections.

In paragraphs (6)-(23) of the Office Action, claims 26-44 were rejected under 35 U.S.C. § 103 as being obvious in view of the combination of Inagaki, Guyon, and Bonadio. In paragraphs (25)-(47) of the Office Action, claims 26-44 were rejected under 35 U.S.C. § 103 as being obvious in view of the combination of Inagaki, Guyon, Bonadio, and Newton.

The Applicant respectfully traverses these rejections in light of the arguments set forth below.

B. The Applicant's Claimed Invention

The Applicant's invention as recited in independent claims 26, 27, and 36, comprises a calculator having a display screen covered by a touch sensitive surface, and a processing circuit, coupled to the display screen and the touch sensitive surface. The processing circuit records movements of a pointing member as the pointing member traces across the touch sensitive surface of the display screen. The processing circuit also recognizes the recorded movements of the pointing member on the touch sensitive surface of the display screen as characters. In addition, the processing circuit recognizes mathematical expressions comprised of operands and operators from a relative placement of the characters. Finally, the processing circuit displays the mathematical expressions on the display screen, performs calculations indicated by the operands and operators in the displayed mathematical expressions, and displays a result of the performed calculations on the display screen.

The above-identified combination of elements found in the Applicant's invention are not anticipated nor rendered obvious by the Inagaki, Bonadio, Guyon or Newton references. More specifically, the Inagaki, Bonadio, Guyon and Newton references do not teach or suggest the limitations of the independent claims directed to recognizing mathematical expressions comprised of

operands and operators from a relative placement of the characters.

#### C. The Inagaki Reference

The Inagaki reference discloses a calculator having a display section and separate key array. The calculator uses the key array for recognizing handwriting input. A user runs his finger over the key array in the form of a symbol, and the calculator recognizes the symbol and enters it as if the corresponding button was pressed. The Inagaki reference teaches the entry of digits one at a time, and thus there is no issue related to the recognition of relative placement of the digits. However, the Inagaki reference does not teach nor suggest limitations directed to recognizing mathematical expressions comprised of operands and operators from a relative placement of the characters.

#### D. The Bonadio Reference

The Bonadio reference discloses a method and apparatus for providing interactive mathematical manipulation on a computer system. An equation or group of equations is initially typed in by the user on a keyboard, but not through handwritten input, and then displayed on a separate monitor. Manipulations of the equations previously entered via the keyboard and displayed on the monitor may be affected by using a mouse. However, the Bonadio reference does not teach or suggest limitations directed

to recognizing mathematical expressions comprised of operands and operators from the relative placement of the characters.

E. The Guyon Reference

The Guyon reference discloses a neural network for printed and cursive handwritten character recognition. The network records trajectory information about handwritten characters in a memory device for use in a subsequent character recognition without the use of context information. However, the Guyon reference does not teach or suggest limitations related to recognizing mathematical expressions comprised of operands and operators from a relative placement of the characters. Indeed, the Guyon reference teaches away from such limitations, because it states that character recognition occurs without the use of context information (see column 1, lines 47-59).

F. The Newton Reference

The Newton reference comprises a MAC Week article by Henry Norr, entitled "Recognizing All Possible Capabilities", and dated June 8, 1992. The Newton reference discusses Apple's Newton personal digital assistant (PDA) and its capacity to perform as a calculator. However, the Newton reference does not teach or suggest limitations related to recognizing mathematical expressions comprised of operands and operators from a relative placement of the characters.

In addition, the Applicant has previously submitted a Declaration under 37 C.F.R. § 1.131 to swear behind the Newton reference and thereby remove it as a prior art reference. As a result, the Newton reference is no longer properly asserted against the claims of the present invention:

VI. Conclusion.

In view of the amendments and arguments, it is submitted that the Examiner should withdraw the rejections under 35 U.S.C. §§ 102, 103 and 112, after reconsideration. Moreover, it is submitted that this application is now in good order for allowance and such action is earnestly solicited.

Should the Examiner believe minor matters still remain that can be resolved in a telephone interview, the Examiner is urged to call the below-signed attorney.

Respectfully submitted,

Michael W. Morgan

By his attorneys,

MERCHANT, GOULD, SMITH, EDELL  
WELTER & SCHMIDT  
11150 Santa Monica Blvd.  
Suite 400  
Los Angeles, California 90025  
(310) 445-1140

Dated: June 11, 1996

By: George H. Gates  
George H. Gates  
Reg. No. 33,500

I hereby certify that this correspondence is being deposited with the United States Postal Service on first class mail in an envelope addressed to: Assistant Commissioner for Patent, Washington, D.C. 20521 on

June 11, 1996  
(Date of Deposit)

George H. Gates  
George H. Gates



## IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

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Applicant: Michael W. Morgan

Examiner: D. Pan

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Notice of

Allow. Date: N/A

Batch No.: N/A

Title: METHOD AND APPARATUS FOR RECOGNIZING AND PERFORMING HANDWRITTEN CALCULATIONS

Box AF

Assistant Commissioner for Patents  
Washington, D.C. 20231

Sir:

We are transmitting herewith the attached:

No Additional fee is required

## CLAIMS AS AMENDED

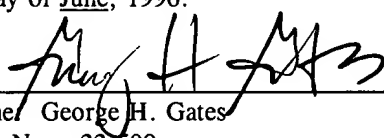
CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR		PRESENT EXTRA		RATE		FEE
TOTAL CLAIMS:	-		=		x	\$	=	\$
INDEPENDENT CLAIMS:	-		=		x	\$	=	\$
MULTIPLE DEPENDENT CLAIM FEE								\$
TOTAL FILING FEE								\$

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Please consider this a **PETITION FOR EXTENSION OF TIME** for a sufficient number of months to enter these papers and please charge any additional fees or credit overpayment to Deposit Account No. 13-2724. A duplicate of this sheet is enclosed.

CERTIFICATE UNDER 37 CFR 1.8: The undersigned hereby certifies that this Transmittal Letter and the paper, as described hereinabove, are being deposited in the United States Postal Service, as first class mail, in an envelope addressed to: BOX AF Assistant Commissioner for Patents, Washington, D.C. 20231, on this 11th day of June, 1996.

MERCHANT, GOULD, SMITH, EDELL, WELTER & SCHMIDT  
Westwood Gateway II, Suite 400, 11150 Santa Monica Boulevard  
Los Angeles, CA 90025-3395  
(310) 445-1140

By:   
Name: George H. Gates  
Reg. No.: 33,500  
GHG/dab

(GENERAL)